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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/090,415      | 02/27/2002  | Mike Ming Liu        | ZLINK.011A          | 6203             |

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EXAMINER

AMINZAY, SHAIMA Q

ART UNIT PAPER NUMBER

2684

DATE MAILED: 07/16/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/090,415

**Applicant(s)**

LIU, MIKE MING

**Examiner**

Shaima Q. Aminzay

**Art Unit**

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### ***DETAILED ACTION***

1. This action is responsive to communications: Application Filed: 02/27/2002.
2. Independent Claims 1, 11, 15, 22, 25, and dependent claims 2-10, 12-14, 16-21, and 23-27 are pending in the case.
3. The present title of the application is "Low power transponder circuit".

### ***NON-FINAL ACTION***

#### ***Claim Rejections - 35 USC § 103***

- ◆ The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- ◆ Claims 1-27 are rejected under 35 U.S.C.103(a) as being unpatentable over Sharpe U. S. Patent 5621412, and in view of Friedman et al. U. S. Patent 6593845.

4. Regarding claims 1, and 25, Sharpe teaches a transponder circuit (Figures 4-5 (14)) comprising an input signal section coupled to first comparator (see for example, Figures 4-6 (in Figure 5, the first block is incorrectly labeled 64 instead of 62), column 5, lines 10-15, and column 9, lines 44-52, the input signal section coupled to the first comparator (Figure 5, 68)), and coupling antenna to the first

comparators (see for example, Figures 5, comparator 68 and circuit 72 are coupled to antenna 30 via detector module 70).

However, Sharpe does not teach the second comparator.

Friedman teaches input signal section coupled with the sampling comparator (see for example, Figure 2 (38), column 5, lines 11-14, the comparator 38 is couple to the input section 32).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Friedman's active RF transponder "sample comparator" (see for example, column 2, lines 30-32, Figure 2 (38)) with Sharpe's transponder with wake-up circuitry to provide a low power transponder to "be made responsive to signals in plural frequency ranges to be waked by interrogators operating at the different ranges" (Friedman, column 17, lines 33-35), and to conserve transponder battery power (Friedman, see for example, column 2, lines 20-26).

5. Regarding claims 11, and 15, Sharpe teaches reducing power consumption in a transponder circuit (see for example, column 1, lines 21-27, and column 3, lines 47-49, conserving energy by reducing transponder circuit's power), and activating a first comparator prior to receiving a predefined signal (see for example, Figures 5 (in Figure 5, the first block is incorrectly labeled 64 instead of 62), column 5, lines 10-15, and column 9, lines 44-52, the first active comparator (Figure 5 (68))), and activating a second circuit in response to an output from said first comparator (see for example, Figures 5 (74), column 10, lines 4-5, the

second circuit 74 connected to the first circuit (as figure shows) to the output of the first comparator (68)), and a first comparator which is enabled and the second circuit is disabled (see for example, column 9, lines 46-49, and column 10, lines 1-5; the first circuit with the first comparator and the second circuit with filter (Figure 6 (74))).

However, Sharpe does not teach the second comparator.

Friedman teaches input signal section coupled with the sampling comparator (see for example, Figure 2 (38), column 5, lines 11-14, the comparator 38 is couple to the input section 32).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Friedman's active RF transponder "sample comparator" (see for example, column 2, lines 30-32, Figure 2 (38)) with Sharpe's transponder with wake-up circuitry to provide a low power transponder to "be made responsive to signals in plural frequency ranges to be waked by interrogators operating at the different ranges" (Friedman, column 17, lines 33-35), and to conserve transponder battery power (Friedman, see for example, column 2, lines 20-26).

6. Regarding claim 22, Sharpe teaches a transponder circuit (Figures 4-5 (14)), comprising: an input terminal (Figures 4-5 (30)); a first comparator (Figures 4-5 (68)) coupled to said input terminal (see for example, Figures 4-6 (in Figure 5, the first block is incorrectly labeled 64 instead of 62), column 5, lines 10-15, and column 9, lines 44-52, the first comparator coupled to the input terminal, and the

second circuit coupled to said input terminal (see for example, Figures 5 (74), column 10, lines 4-5, the second circuit 74 coupled to the input terminal 70 (detector, 70)), and the control circuitry (see for example, Figure 9 (110), the controller coupled to the first comparator (Figure 5 comparator 68 connected to ASIC 34 (Din), and connected to comparator (Figure 9 (120) and controller 110) and further see the main controller circuit controller (Figure 11)).

However, Sharpe does not teach the second comparator which is disabled.

Friedman teaches the sampling comparator (see for example, Figure 2 (38), column 5, lines 11-14, the comparator 38 is couple to the input section 32).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Friedman's active RF transponder "sample comparator" (see for example, column 2, lines 30-32, Figure 2 (38)) with Sharpe's transponder with wake-up circuitry to provide a low power transponder to "be made responsive to signals in plural frequency ranges to be waked by interrogators operating at the different ranges" (Friedman, column 17, lines 33-35), and to conserve transponder battery power (Friedman, see for example, column 2, lines 20-26).

7. Regarding claims 2, 12, and 17, Sharpe and Friedman teach claims 1, 11, 15, and further Sharpe teaches first comparator consumes less power (see for example, column 9, lines 49-67, the comparator 68 uses less power).
8. Regarding claims 3, 13, 24, and 27, Sharpe and Friedman teach claims 1, 11, 22, 25, and further Friedman teaches second comparator operates at a higher

speed (see for example, column 5, lines 25-40, the comparator 38 operates at a high speed).

9. Regarding claims 4, 7, 8, and 16, Sharpe and Friedman teach claims 1, 15, and further Sharpe teaches the second circuit enabled and operates only after a predefined signal received and validated at the first comparator (see for example, Figures 5 (74), column 9, lines 47-52, column 10, lines 1-12, and 48-45, the second circuit 74 connected to the first circuit (as figure shows) to the output of the first comparator (68)).
10. Regarding claim 5, Sharpe and Friedman teach claim 1, and further Sharpe teaches reference voltage for said first comparator is adjustable during circuit operation (see for example, Figures 5 (74), column 9, lines 47-52, the first comparator (68) adjusted using the threshold value during operation).
11. Regarding claim 6, Sharpe and Friedman teach claim 1, and further Friedman teaches a reference voltage for said second comparator is adjustable during circuit operation (see for example, column 5, lines 25-35, the second comparator (38) reference voltage is adjusted during operation).
12. Regarding claim 21, Sharpe and Friedman teach claim 15, and further Sharpe teaches validation circuitry configured to validate the input signal in response to a signal from said first or second comparator (see for example, Figures 5 (62), the first comparator (68) connects to ASIC (34) via DIN, and the second circuitry connected to the ASIC (34) via Wake\_Up and further in Figure 8 both connections are connected to the Main controller (104) that validates the input

signal in response to the first comparator or second circuitry, column 11, lines 43-67).

13. Regarding claims 9, 14, and 19, Sharpe and Friedman teach claims 1, 11, 15, and further Friedman teaches valid receive signal processing produced by said second comparator (see for example, column 5, lines 3-41, the comparator (Figures 2 (38)) process the valid received signal).
14. Regarding claim 10, Sharpe and Friedman teach claim 1, and further Friedman teaches second comparator turns off when a voltage level of said input signal is below a voltage level of a reference voltage signal received at said second comparator (see for example, column 5, lines 25-41, the comparator (Figures 2 (38)) receiving below the threshold value switch to low value)
15. Regarding claims 23, 26 and 27, Sharpe and Friedman teach claim 22, 25, and further Sharpe teaches the first comparator (Figure 5 (68)) consumes less power than the second comparator (see for example, Figure 5 (68), column 9, lines 45-52, and column 10, lines 1-20, the first circuit including first comparator (68) consumes less power than the second circuitry (74 and 64)).
16. Regarding claims 18, and 19, Sharpe and Friedman teach claim 15, and further Friedman teaches reference voltage for said first comparator is equal to a reference voltage for said second comparator (see for example, Figure 5 (68), column 9, lines 45-54, and column 10, lines 1-20, the reference voltage of the first circuitry is the equal to the reference voltage of the second circuitry).



17. Regarding claims 20, Sharpe and Friedman teach claim 15, and further Friedman teaches activating an oscillator upon detection of a signal activating additional transponder circuit components following signal validation (see for example, Figure 2, column 5, lines 3-41, the oscillator 36 activated upon receiving valid data and activating additional transponder circuitry).

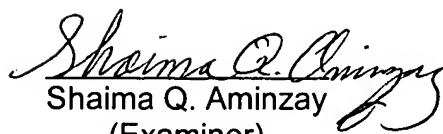
### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 form.

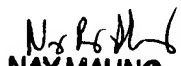
### ***Inquiry***

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 703-305-8723. The examiner can normally be reached on 7:00 AM -5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Shaima Q. Aminzay  
(Examiner)

July, 12, 2004

  
NAY MAUNG  
SUPERVISORY PATENT EXAMINER  

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(SPE)  
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